163924

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: MAY 15 1992

SUBJECT: ACTION MEMORANDUM - Request for an Emergency Removal Action at the General Die Casting Site, Detroit, Wayne County, Michigan (Site/Spill ID #LQ)

FROM: Peter F. Guria, On-Scene Coordinator
Emergency and Enforcement Response Branch, Section 1, HSE-GI

Robert Boudh for P Guria 4/21

TO: David A. Ullrich, Director
Waste Management Division, H-7J

THRU: Norman R. Niedergang, Associate Division Director
Office of Superfund, HS-6J

N Niedergang

I. PURPOSE

The purpose of this Memorandum is to obtain your approval to expend up to $393,610 to mitigate threats to human health and the environment posed by the presence of uncontrolled hazardous substances located at the General Die Casting site (GDC), 13700 Mt. Elliot, Detroit, Wayne County, Michigan. The now abandoned facility once manufactured and electroplated zinc die castings. On March 13, 1992, a removal action was initiated under a $50,000 verbal authority by the Chief of the Emergency and Enforcement Response Branch (EERB) to stabilize and secure threats posed at the site. The removal action seeks to abate the release of hazardous substances and materials listed under Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), by removing acid and base liquids contained in tanks, cyanide bearing solid and liquid material found on the floors, plating vats, floor collection sumps, miscellaneous laboratory chemicals, and soil contaminated with cyanide, chromium, lead and nickel. It is estimated that the removal action will require 30 on-site working days to complete.

The site is not on the National Priorities List (NPL).

II. SITE CONDITIONS

CERCLIS ID# MID 011 247 806.

The proposed removal action at the GDC site is a time-critical emergency due to conditions at the site. The United States Environmental Protection Agency (U.S. EPA) On-Scene Coordinator (OSC) and Technical Assistance Team (TAT) conducted a site re-assessment on February 10, 1992, and documented site conditions.

Access to the site is not restricted and evidence of vandalism and trespassing has been observed in several areas within the building. Eleven tanks were observed located in a plating waste treatment area of

the facility. Some of these tanks were elevated, while others were placed directly on the floor. Field testing of liquids contained in these tanks revealed pH values ranging from <1.0 to 10. The floor beneath the tanks appeared to have a light green crystalline material covering it. A white crystalline solid was also observed at several other locations within the waste treatment area. Floor sumps used to collect overflow liquids were filled with green liquids and green/white solid material.

Analytical results of liquid and solid samples collected from the waste treatment area of the facility revealed tanks containing high levels of chromium and pH values ranging between <1.0 and 10. Solid material on the floor beneath the tanks was found to contain over 600,000 parts per million (ppm) cyanide. The analytical results of the liquid and solid material indicate the presence of characteristic corrosive and reactive wastes under the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 40 CFR 261.22, and 40 CFR 261.23. If acid liquid and cyanide bearing solid material mix, the result is hydrogen cyanide gas which can cause death at low level concentrations.

III. PHYSICAL LOCATION

The GDC site is located at 13700 Mt. Elliot, Detroit, Wayne County, Michigan. The facility is bordered to the north and south by industrial businesses, to the east by the Consolidated Rail Corporation (CONRAIL) railroad tracks, and to the west by Mt. Elliot Avenue.

The facility is situated in an urban residential and light industrial area and consists of a 21,250 sq. ft. building located on 0.6 acres. In 1990, the population of Detroit, Michigan, was 1,027,974 (U.S. Bureau of the Census). Population within one square city block of the facility is approximately 1,000.

IV. SITE DESCRIPTION AND BACKGROUND

The property and building located at 13700 Mt. Elliot Avenue was initially operated by the Wolverine Die Casting Corporation from the mid-1950's until 1970, when it was sold to the General Die Casting Company. GDC manufactured and electroplated zinc die castings at the facility between August 1970 until its closure in December 1988. In January 1989, the facility was sold to William R. Aikens, an agent for a corporation to be named at a later date.

A level I environmental assessment was conducted on August 31, 1988, by The Toxico Corporation of Southfield, Michigan, on behalf of GDC. The Toxico assessment recommended that additional sampling be conducted to evaluate the extent of contamination of the impacted portion of the property on the south side of the GDC building, which is owned by the Central Steel and Wire Company (CS&W). Follow up sampling was conducted by Toxico on September 19, 1988, and the analytical report dated January 24, 1989, revealed the presence of polynuclear aromatic hydrocarbons (PNAs). Only priority pollutant analysis was performed on

the soil samples collected because Toxico was informed that the contamination was thought to have resulted from seepage of cutting oil through the concrete wall and floor of the building.

The CS&W Company hired Gabriel Laboratories, Ltd., Chicago, Illinois, to conduct an independent assessment of the property on July 25, 1989. Analytical results of surface soil samples collected from the area south of the GDC building were reported on September 8, 1989, and indicated elevated levels of PNAs and heavy metals.

On July 5, 1990, Toxico submitted a draft workplan to the Michigan Department of Natural Resources Emergency Response Division (MDNR-ERD), Livonia, Michigan, office for soil remediation of the area south of the GDC building. The workplan was approved by the MDNR based on information provided by Toxico that the only contamination at the GDC facility was PNAs. Excavation of the contaminated soil south of the GDC building began on or before July 26, 1990.

Gabriel collected soil and surface water samples during Toxico's excavation of contaminated soil on July 26, 1990. Analytical results revealed cyanide levels ranging from 75-1700 milligrams per liter (mg/l) in ponded surface water, and between 0.43-250 milligrams per kilogram (mg/kg) in the soil from the area of excavation. Analysis of additional samples collected from the excavated area by Gabriel between August 8 and 10, 1990, revealed cyanide levels ranged from 1673 mg/kg to 12 mg/kg.

On August 11, 1990, soil and surface water samples were collected by the MDNR to confirm Gabriel's July 26 soil and water sample results. Analytical results indicated cyanide levels to range from 87 to 220 mg/kg in the soil, and 755 mg/l in ponded surface water within the excavated area. Additionally, elevated levels of nickel, copper, and zinc were also present in the soil samples.

The MDNR-ERD, in a letter dated November 27, 1990, denied the clean closure request submitted by GDC on October 15, 1990, for the facility. The MDNR directed GDC to conduct additional investigative and corrective actions to determine the extent of contamination in soil and groundwater throughout the entire site, determine the contamination impact on adjacent property owners, address any contamination present, and submit a remedial action plan to achieve appropriate cleanup criteria.

On January 20, 1991, the TAT conducted a site assessment of the GDC facility to evaluate threats posed to human health and the environment at the site. Approximately 22 drums of corrosive and plating treatment waste suspected of containing heavy metals and cyanide were observed. Air monitoring conducted with an organic vapor analyzer (OVA) revealed organic vapors between 20 and 30 parts per million (ppm) above normal background levels. Personnel were observed working in the building without the appropriate respiratory protection, removing equipment and tracking suspected plating waste residue outside. Personnel ignored the TAT warnings of impure air and remained in the building for the duration

of the assessment. The plating waste treatment portion of the facility was covered with 2 to 3 inches of flaky green material inside the diked containment area. The TAT also observed that contaminated soil on the south side of the building had been excavated and removed from the site. It is unknown whether this material has been properly disposed of.

V. OTHER ACTIONS TO DATE

On May 3, 1991, the TAT accompanied a member of the U.S. EPA Office of Regional Counsel on a visit to the site. During this inspection, air monitoring of the building showed no readings above normal background concentrations; however, it was noted that the 22 drums identified during the previous site assessment had been removed. The waste treatment tanks and plating vats remained on site, still containing significant amounts of material. Most of the light green crystalline material observed previously in the diked area of the waste treatment portion of the facility had also been removed. The area south of the GDC building had been backfilled and access restricted by a chain link fence. Information regarding the removal of the drums and treatment area sludge has not been made available to the U.S. EPA at this time.

On January 28, 1992, a representative of the CS&W Company, bordering the GDC facility to the north, contacted the U.S. EPA EERB, Grosse Ile, Michigan, office to report that an unknown liquid was being released from the site. The material was flowing from the northwest wall of the facility across the area that had previously been identified as containing cyanide in the soil, and entering the City of Detroit combined sewer system. The EERB OSC and TAT responded to the situation and found that the 8 inch fire main had ruptured and flooded the northwest portion of the building. Water was observed flowing from the north wall of the facility and migrating across the CS&W property before entering the sewer system on Mt. Elliot Avenue. The City of Detroit Water and Sewer Department was contacted and shut off the water main leading to the building. The TAT and OSC then conducted a quick inspection of the remainder of the GDC facility. It was determined that a site re-assessment and sampling of tanks, vats, and floors would be needed to document current site conditions.

On February 10, 1992, the TAT and OSC conducted a re-assessment of site conditions at the GDC facility. Access was found to be somewhat restricted; however, evidence of trespass and vandalism were observed in several areas of the building. Eleven tanks of suspected plating waste were observed in the eastern portion of the building. All tanks of liquid and/or sludge material were suspected of containing heavy metals and possibly cyanide. Crystalline solids were observed on the floor and walls surrounding the tanks. Analytical results of samples collected from the tanks, floors, and collection sumps revealed elevated levels of heavy metals and extremely elevated levels of cyanide (>600,000 ppm). Several of the tanks containing liquid wastes indicated low pH values and high concentrations of chromium, a corrosive wastewater commonly associated with plating operations. A number of vats containing solid

material was also observed in various locations throughout the abandoned facility.

On March 13, 1992, the U.S. EPA began emergency removal activities to stabilize the threats posed by tanks containing acid liquids and cyanide bearing solid materials.

A meeting was held with representatives of the U.S. EPA and the potentially responsible parties (PRPs) on March 19, 1992, to discuss cleanup activities currently undertaken by the U.S. EPA at the site. See the Enforcement Confidential Addendum for information regarding this meeting.

The proposed cleanup activities described in this Action Memorandum have been discussed with Mike Stenzel of the MDNR-ERD.

VI. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the GDC site present an imminent and substantial endangerment to public health, or welfare, or the environment based upon factors set forth in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR 300.415(b)(2). These factors include:

a) actual or potential exposure to hazardous substances by nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants;

This factor is present at the facility due to the presence of reactive and corrosive solids and liquids found throughout the building. Analytical results of solid and liquid samples collected from tanks, floor, and floor collection sumps has revealed the presence of cyanide at levels above 600,000 ppm and strong acids with pH values of <1.0. The tanks containing acids and high concentrations of chromium exhibit the characteristic of corrosivity under RCRA, 40 CFR, 261.22, and are a listed waste under RCRA, 40 CFR 261.31 (F006). The cyanide solids exhibit the characteristic of reactivity under RCRA, 40 CFR, 261.23. Two tanks containing strong acids have been observed next to the cyanide bearing floor material. Should a release of acid occur from these tanks into the reactive cyanide floor material, toxic hydrogen cyanide gas would be generated. A cloud of this gas would not be contained by the facility and would be released to the surrounding area exposing the human and animal population nearby. The corrosive nature of the acid and base liquids presents a direct contact threat should unauthorized access to the facility continue.

b) hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;

This factor is present at the facility due to the existence of tanks containing acid and base liquids. Approximately 900 gallons have been

documented with pH values of <1.0, indicating the presence of a characteristic corrosive waste under RCRA, 40 CFR 261.24. The rapidly deteriorating roof has collapsed in several areas of the building, and continued deterioration of the building and roof could result in a compromise of the tank's integrity and release their contents. Damaged dikes surrounding the waste treatment area, cracked cinder block walls, and the cracked and broken concrete floor would not contain a release of the tanks contents. Trespass and vandalism have also been observed within the facility. Further unrestricted access by vandals also increases the potential for a release of material from the tanks.

c) high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;

This factor is present at the site due to the concentrations of heavy metals and cyanide in the soil south of the GDC building. Analytical results provided by the MDNR and Gabriel Laboratories have documented significant levels of nickel, copper, and zinc present in the soil south of the building. These metals are commonly utilized in the process of plating zinc die castings. Analytical results have also revealed cyanide levels in the soil at 250 mg/kg. Ponded surface water found in this area has also indicated cyanide levels ranging between 75 to 1700 mg/l. There are no controls for surface water runoff and, during periods of increased precipitation, contaminants would be allowed to migrate further off site.

d) weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

This factor is present at the site due to the continued deterioration of the building by the natural elements. The building has been abandoned since 1988 and has deteriorated rapidly. The roof has collapsed in several areas of the building and large holes have been created through removal of ventilation equipment allowing precipitation to enter. Water entering through the roof has been observed migrating through cracks in the concrete floor and walls. Periods of heavy precipitation could also allow contaminants present in the soil to the south of the GDC building to continue to migrate off site.

e) the unavailability of other appropriate Federal or State response mechanisms to respond to the release;

This factor supports the actions proposed by this Memorandum at the facility because the MDNR currently does not have the necessary funding to respond to this time-critical situation.

VII. ENDANGERMENT DETERMINATION

The current site conditions, tanks containing acid liquids with pH values <1.0 situated next to plating solid/sludge material containing cyanide >600,000 ppm, pose a serious threat to human health and the environment should a release of the tank contents occur. Access to the

site is not well restricted and continued deterioration and/or vandalism of the building and its contents could lead to such a release. Should the acid liquids release into the cyanide bearing solids, a cloud of deadly hydrogen cyanide gas would form which could cause immediate death in humans if concentrations are greater than 50 ppm. The actual or threatened releases of these hazardous substances, if not addressed by implementing the response action proposed in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

VIII. PROPOSED ACTIONS AND ESTIMATED COSTS

The purpose of this removal action is to mitigate the imminent and substantial threats posed to public health, or welfare, or the environment. Removal activities at the site are to include: stabilization of tank liquids and floor solids; containerization of all floor, vat, and tank solids and sludge; sampling and characterization of all containerized material; decontamination of emptied tanks, vats, and building floors; soil sampling to determine the extent of contamination directly under and to the south of the facility; excavation of all identified contaminated soil; and disposal of all characterized wastes identified and generated during removal activities.

Specifically, the following removal activities are proposed:

1) Develop and implement site safety and security measures.

2) Develop and implement an air monitoring program for hydrogen cyanide vapor during site activities.

3) Sample, identify, and dispose of all liquids and sludge found in tanks, vats, and floor sumps.

4) Remove, containerize, stage, sample, identify, and dispose of all floor, vat, and floor sump solid material.

5) Stage, sample, identify, overpack, if necessary, and dispose of all drum and small laboratory chemical containers found on site.

6) Conduct a sampling program to characterize the type and extent of soil and groundwater contamination directly beneath and to the south of the facility. Remediate all affected areas identified, and conduct post cleanup sampling to verify that all contaminated soil and groundwater has been remediated to cleanup levels as specified by the OSC.

7) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes, or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off site policy.

Removal activities will require approximately 30 on-site working days to complete. The threats posed by tanks containing acidic liquids (pH <1.0), solid material containing high levels of cyanide (>600,000 ppm), drums and small laboratory chemical containers of unknown contents, and associated contaminated soil beneath and directly adjacent to the facility meet the criteria listed in Section 300.415(b)(2) of the NCP and are consistent with any long-term remedial action which may be required.

The OSC has begun planning for the provision of post removal site control, consistent with the provisions of Section 300.415(k) of the NCP. The nature of this removal, elimination of all surface threats, is, however, expected to minimize the need for post removal site control.

The detailed cleanup contractor costs are presented in Attachment 1 and estimated project costs are summarized below:

EXTRAMURAL COSTS	
Clean up Contractor	$245,000
Contingency (15%)	36,750
Subtotal	$281,750
Total TAT, including multiplier costs	33,600
Extramural Subtotal	$315,350
Extramural Contingency (15%)	$ 47,300
TOTAL, EXTRAMURAL COSTS:	$362,650
INTRAMURAL COSTS:	
U.S. EPA Direct Costs $30/hr x (360 Regional + 36 HQ hrs)	$ 11,880
U.S. EPA Indirect Costs $53/hr x (360 Regional hrs)	$ 19,080
TOTAL, INTRAMURAL COSTS	$ 30,960
TOTAL REMOVAL PROJECT CEILING ESTIMATE	$393,610

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants, or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety and to the environment. These

response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

Applicable or Relevant and Appropriate Requirements (ARARs)

All applicable, relevant, and appropriate requirements (ARARs) will be complied with to the extent practicable. A letter has been sent to Peter Ollila of the Lansing, Michigan, office of the MDNR-ERD requesting that the MDNR identify state ARARs. Any state ARARs identified in a timely manner for this removal action will be complied with to the extent practicable.

IX. CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED

Presently, conditions at the site could lead to increased health risks to the surrounding neighborhood and industrial businesses should action be delayed. Tanks containing acid liquids and solids containing extremely high levels of cyanide have been documented on site. Analytical results of solid samples have revealed cyanide levels as high as 600,000 ppm. Tanks containing acid liquids with pH values <1.0 are located directly above and adjacent to this solid material. If the tanks should leak or be vandalized and come into contact with the solid material containing cyanide compounds, hydrogen cyanide gas would be released and could cause immediate death in humans if concentrations are greater than 50 ppm. Cyanide, chromium, nickel, and lead have been documented in the soil south of the facility, indicating that contaminates have migrated offsite. These contaminants could continue to migrate off site during periods of increased precipitation. Access to the site is unrestricted and vandalism could lead to a release and direct contact of acid liquids contained in tanks. Any fire or additional release of hazardous substances could lead to exposure of these contaminants to the nearby businesses and residents bordering the site.

X. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues for the GDC site.

XI. ENFORCEMENT

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Confidential Enforcement Addendum.

XII. RECOMMENDATION

This decision document represents the selected removal action for the General Die Casting site, located in Detroit, Michigan, developed in accordance with CERCLA, as amended by SARA, and not inconsistent with the NCP. This decision is based upon the Administrative Record for the site. Attachment 2 identifies the items that comprise the Administrative Record upon which the selection of the removal is based.

Because the conditions at the site meet the NCP Section 300.415(b)(2), criteria for a removal action, your approval of this request is recommended. The estimated total project costs are $393,610, of which up to $281,750, may be used for cleanup contractor costs. You may indicate your decision by signing below:

APPROVE David A. Ullrich DATE 5/15/92
Director
Waste Management Division

DISAPPROVE _____ DATE _____
Director
Waste Management Division

Enforcement Addendum
Attachments
1. Detailed Cleanup Contractor Cost
2. Index to Administrative Record

cc: Terri Johnson, OS-210
Alan Howard, Michigan Department of Natural Resources
Shelia Huff, U.S. Department of the Interior

bcc: J. Sias, CS-3T
A. Bauman, HSE-5J
R. Powers/R. Buckley, HSE-GI
R. Bowden, HSE-5J
P. Schafer, HSE-5J
L. Beasley, HSE-5J
L. Fabinski, ATSDR, HS-6J
O. Warnsley, RP/CRU, HS-6J
T. Lesser, P-19J
F. Myers, 5MB-19J
P. Guria, HSE-GI
R. Dumelle, MC-10J
EERB Read File
EERB Delivery Order File (C. Brasher)
EERB Site File

ENFORCEMENT ADDENDUM

Redacted-information not relevant to the selection of the removal action.

ATTACHMENT 1

DETAILED CLEANUP CONTRACTOR COST ESTIMATE
GENERAL DIE CASTING SITE
DETROIT, MICHIGAN
APRIL 1992

The estimated cleanup contractor costs are as follows:

ERCS Personnel	$ 55,000
ERCS Equipment and Materials	7,000
ERCS Subcontractors	10,000
Sampling and Analytical	23,000
Transportation and Disposal	150,000
TOTAL	$245,000

ATTACHMENT 2

ADMINISTRATIVE RECORD
FOR
GENERAL DIE CASTING

February 1, 1991

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
00/00/00	File	File	Site Description	1
08/20/90	Sawyer, S. Gabriel Labs.	Fiala, R. Central Steel & Wire Co.	Course of action correspondence	2
11/01/90	Gabriel Labs.	Stenzel, M. MDNR	Remedial closure report correspondence	2
11/27/90	Oyinsan, D. General Die Casting	Shirley, D. MDNR	Denial of closure correspondence	2
12/20/90	Stenzel, M. MDNR	File	Incident Notification Report	2
01/09/91	Marsh, D. MacDonald & Goren	Stenzel, M., Bowlus, R., MDNR	Correspondence with deed documents	8
01/15/91	Bowden, R. EERB	Recipients	General Notice of Potential Liability	7
01/18/91	Langer, H. E & E	USEPA	Site Assessment	10
02/21/91	Andrews, F., Miller, Canfield, Paddock, and Stone	Beasley, L., EERB	Response to General Notice Letter	2

UPDATE

April 14, 1992

07/30/91	Ullrich, D., U.S. EPA		Unilateral Administrative Order	16
03/25/92	Langer, H., E & E	Heaton, D., U.S. EPA	Site Assessment	60
00/00/92	Guria, P., U.S. EPA	Neidergang, N., U.S. EPA	Action Memorandum	16